

TAVCAR, Alois, dr.ing.,prof., akad. (Zagreb, Ulica 8. maja 1945, br. 76)

Genetic research of the economically important properties of the agricultural plants of Southern Dalmatia. Ljetopis JAZU 64:321-324 '57 (publ.'60).

1. Poljoprivredno-sumarski fakultet Sveucilista u Zagrebu; clan Nadzornog odbora Jugoslavenske akademije znanosti i umjetnosti.

TAVOAR, Aloiz, dr agronomskih nauka, prof.

International Conference on the Application of Induced Mutations
in Plant Breeding. Nuklearn energija i no.2/3:59 '64.

1. University of Zagreb, Zagreb.

TAVCAR, Danilo

Tumors of the central nervous system. Zdrav.vest., Ljubljana 24
no.4:158-164 1954.

1. Patolosko-anatomski institut v Ljubljani-predstojnik: prof. dr.
France Hribar.
(CENTRAL NERVOUS SYSTEM, neoplasms)

1. HVLAA, 1.
YUGOSLAVIA

Docent DR B. VARGAZON and Prof Dr S. BANIC, Internal Medicine Clinic (Interna klinika), Head (Upravnik) Academician Prof Dr I. TAVCAR, and Department of Microbiology (Mikrobioloski institut), Head Prof Dr S. BANIC, Medical Faculty of University (Zdravniska fakulteta vseucilisca), Ljubljana.

"Role of C-Reactive Protein In Determining State of Rheumatic Disease."

Belgrade, Medicinski Glasnik, Vol 17, No 1, Jan 63; pp 24-26.

Abstract : Review of literature and authors' own experience with the CRP test. Table of presumably original data shows latex CRP test was positive in 26, doubtful in 2 and negative in 59 of 87 tests made in 76 patients with 12 diagnostic classifications. Two case reports, 6 Western references.

1/1

TAVCAR I. Interna Klinika Medicinske Fakultete, Ljubljana, Hipertonija in delozmoznost, Occupational aspects of hypertension, Zdravstveni Vestnik, Lublin 1949, 8/9-12 (152-154)

So: Medical Microbiology and Hygiene, Section IV, Vol 3, No 1-6

TAVCAR, I.

Yugoslavia (430)

Party of Slovenia). Vol. 12, no. 177,
December 22, 1951.

East European Accessions List. Library of
Congress, Vol. 1, no. 13, November 1952.

UNCLASSIFIED

"Card 2 of 2"

TAVCAR, J.

GEOGRAPHY & GEOLOGY

TAVCAR, J. (Geografsko drustvo Slovenije in Zemljepisni muzej Slovenije) Ljubljana.

Vol. 5, No. 2, 1958. Activity of the Ljubljana chapter of geographers and historians. p. 30

Monthly Index of East European Accessions (EEAI) LC, Vol. 8, No. 4, April, 1959

TAVCAR, J.

GEOGRAPHY & GEOLOGY

TAVCAR, J. (Geografsko drustvo Slovenije in Zemljepisni muzej Slovenije) Ljubljana.

Vol. 5, no. 4, 1958. Excursion of the Geographical Society of Slovenia to Trieste and Venice. p. 27

Monthly Index of East European Accessions (EEAI) LC, Vol. 8, No. 4, April, 1959

TAVCAR, J.

GEOGRAPHY & GEOLOGY

TAVCAR, J. (Geografsko drustvo Slovenije in Zemljepisni muzej Slovenije) Ljubjana.

Vol. 5, no. 4, 1958. Some thoughts concerning an inquiry. p. 19

Monthly Index of East European Accessions (EEAI) LC, Vol. 8, No. 4, April, 1959

TAVCAR, J.

Dr. Zvonimir Dugacki's Industrijska geografija svijeta (Industrial Geography for Higher Classes of Gymnasiums); a book review, p. 31.

GEOGRAFSKI OBZORNIK. (Geografsko drustvo Slovenije in Zemljepisni muzej Slovenije)
Ljubljana, Yugoslavia
Vol. 6, no. 1/2, 1959.

Monthly list of Eastern European Accession Index (EEAI) LC vol. 8, No. 11
November 1959
Uncl.

TAVCAR, J.

Professor Pavao Kurtek's Geografija za vise razrede gimnazija (Geography for Higher Classes of Gymnasiums); a book review, p. 31.

GEOGRAFSKI OBZORNIK. (Geografsko drustvo Slovenije in Zenljepisni muzej Slovenije)
Ljubljana, Yugoslavia
Vol. 6, no. 1/2, 1959.

Monthly list of Eastern European Accession Index (EEAI) LC vol. 8, No. 11
November 1959
Uncl.

~~TAVDGIRIDZE, L.N.~~

Field of vagrant currents of monotrack d.c. railroads. Trudy
Energ. inst. AN Gruz.SSR 8:137-156 '53. (MIRA 11:10)
(Electric railroads) (Electric fields)

TAVDGIRIDZE, L.N.

Investigation methods for vagrant current fields. Soob. AN Gruz. SSR
14 no.5:273-279 '53. (MIRA 7:4)

1. Akademiya nauk Gruzinskoy SSR. Institut energetiki, Tbilisi.
(Electric currents, Vagrant)

SOV/112-59-3-5179

8(0), 32(3)

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 3, p 125 (USSR)

AUTHOR: Tavgiridze, L. N.

TITLE: Use of Recording Voltmeters and Volt-Hour Meters for Potential Measurements in a Stray-Current Field
(Primeneniye registriruyushchikh vol'tmetrovo i schetchikov vol'tchasov dlya potentsial'nykh izmereniy v pole bluzhdayushchikh tokov)

PERIODICAL: Tr. In-ta energ. AN GruzSSR, 1957, Vol 11, pp 127-136

ABSTRACT: Necessity and advantages of using recording voltmeters and volt-hour meters in corrosion investigations associated with stray currents are noted. Soviet industry does not produce continuous-type direct-acting recorders with a high enough (10,000-20,000 ohms/v) input resistance. It is recommended that special electron amplifiers supplied by 220/127/110-v AC network be manufactured; such devices would permit use of conventional recording instruments in the stray-current measurements. Amplifier characteristics

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SOV/112-59-3-5179

Use of Recording Voltmeters and Volt-Hour Meters for Potential

and schemes intended for a recording voltmeter and a volt-hour meter are presented. Three scale spans are suggested: 6-0-6 v and 30-0-30 v for measurements on cables and piping and 75-0-75 v for track circuits. The amplifier circuit consists of two stages: (1) an end-device power amplifier with a cathode-follower circuit and (2) a primary-detector voltage amplifier. Basic circuit diagrams for the 3-span amplifier are given, as well as the wiring diagram of the amplifier for the polarized volt-hour meter that has a friction-compensating circuit. Testing of the above described amplifiers under unfavorable conditions in the track-rail circuits at the Suram Pass revealed their complete applicability for investigating stray currents under field conditions.

L.I.A.

Card 2/2

TAVDGIRIDZE, L.N.

New integrator for slowly varying d.c. signals. Trudy Inst. energ.
(MIRA 17:7)
AN Gruz. SSR 17:135-152 '63.

L 36015-66 EWT(1)/T IJP(c) AT

ACC NR: AP6027326

SOURCE CODE: UR/0251/66/041/002/0309/0313

AUTHOR: Tavdgiridze, T. L.; Tsintsadze, N. L.

ORG: Institute of Physics, AN GruzSSR, Tbilisi (Institut fiziki AN GruzSSR)

TITLE: Passage of a fast charged particle through a weakly turbulent magnetoactive plasma

SOURCE: AN GruzSSR. Soobshcheniya, v. 41, no. 2, 1966, 309-313

TOPIC TAGS: magnetoactive plasma, charged particle, fast particle, particle motion, plasma stability, plasma oscillation

ABSTRACT: The authors consider the motion of a fast charged particle passing through a plasma within a constant magnetic field and in which high frequency longitudinal oscillations are excited. A general expression is obtained for the energy loss by a particle in a weakly turbulent plasma, and the loss is evaluated for a turbulent plasma in which the turbulence is due to beam instability. This paper was presented by Academician V. I. Mamasakhlisov on 4 October 1965. Orig. art. has: 11 formulas. [JPRS: 36,456]

SUB CODE: 20 / SUBM DATE: . 04Oct65 / ORIG REF: 002

Cord 1/1 MLP

L 02284-67 EWT(1) IJP(c) AT

ACC NR: AP6025236

SOURCE CODE: UR/0057/66/036/007/1155/1162

AUTHOR: Tavdgiridze, T.L.; Tsintsadze, N.L.

ORG: none

TITLE: Energy loss in the motion of a charged particle in a weakly turbulent magnetized plasma

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 7, 1155-1162

TOPIC TAGS: turbulent plasma, plasma beam interaction, plasma charged particle, plasma instability, plasma oscillation, plasma wave, nonlinear effect

ABSTRACT: The authors discuss the energy loss of a fast charged particle moving through a weakly turbulent plasma in a constant magnetic field when the velocity of the particle is high compared with the phase velocity of longitudinal (Langmuir) waves. The calculations are based on an expression given by B.B.Kadomtsev and V.I.Petviashvili (ZhETF, 43, 2234, 1964) for the nonlinear correction to the resistivity tensor of the plasma. A general expression is derived for the energy lost by the charged particle in scattering Langmuir waves. This rather involved expression is discussed briefly for the case that the Larmor frequency is approximately equal to the Langmuir frequency, and simple expressions for the energy losses in the limiting cases that the Larmor frequency is much higher or much lower than the Langmuir frequency are derived and

UDC: 533.9

Card 1/2

TAVDIDISHVILI, Sh.I.

The quality of inspection has been improved. Put' i put. khoz.
9 no.3:37 '65. (MIRA 18:6)

1. Nachal'nik otdela mekhanizatsii sluzhby puti, Zakavkazskaya
doroga, Tbilisi.

ТАВД.ДИШВЛ. Sh.1.

Our methods for the organization of inermite welding. Pat. i pat.
khos. 9 no.9:22 '65. (MIA 18:9)

1. Nachal'nik oddela mekhanizatsii sluzhby puti Zakavkazskoy
derog. Toilist.

KAUROV,V.; TAVEROVSKIY,Ya.

Repairing the electric heat indicator of oil pressure gauges. Avt.
transp.33 no.9:29 8'55. (MIRA 8:12)
(Automobiles--Apparatus and supplies) (Pressure gauges)

S/0135/64/000/002/0037/0037

ACCESSION NR: AF4013296

AUTHOR: Taver, Ye. I. (Engineer)

TITLE: Corrosion stability of welded joints in Kh17AG14 steel

SOURCE: Svarochnoye proizvodstvo, no. 2, 1964, 37

TOPIC TAGS: steel, Kh17AG14 austenite steel, austenite steel, EP213 steel, Kh17 steel, Kh17T steel, Kh14G1/N3T steel, welding, welded connection, corrosion, weld corrosion, intergranular corrosion

ABSTRACT: Steel Kh17AG14 has the following chemical composition: $\leq 0.15\%$ C; $\leq 0.8\%$ Si; 13.5-15.5% Mn; 16-18% Cr; $\leq 0.6\%$ Ni; 0.3-0.4% N; $\leq 0.02\%$ S; $\leq 0.035\%$ P. According to former investigations, the corrosion properties of this steel are close to those of Kh17, Kh17T, and Kh14G1/N3T. Its welded connections had a tendency to develop intergranular corrosion. It was previously established that steels containing Mn and a carbon content which did not exceed 0.05-0.06% had no tendency toward intergranular corrosion after one hour tempering at 650C. This combination of factors was tested experimentally on Kh17AG14 steel. The samples (butt-welded by the argon arc method) were in the form of sheets 1.8 and 4 mm thick. The corrosion stability of welded seams was tested by the AM method (not described in the text).

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ACCESSION NR: AP4013296

The basic metal as well as welded connections showed satisfactory resistance to intercrystalline corrosion. Steel with 0.06% carbon, heated for 2 1/2 hours at 650C, did develop a tendency toward corrosion. A short application of welding heat did not cause either the separation of the excess phase around the grain boundaries or the tendency toward intergranular corrosion. Orig. art. has: 2 tables.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 26Feb64

ENCL: 00

SUB CODE: ML

NO REF SOV: 003

OTHER: 000

Cord 2/2

TAVETKOV, A.

Let us develop amateur radio contests p. 7 RADIO. (Ministerstvo na poshtite, telegrafite, telefonite i radioto i Tsentralniia suvet na dobrovlanta organizatsiia za otbranata) Sofiya. Vol. 5, No. 4, 1956

SCURCE: East European Accessions List EEAL Library of Congress, Vol. 5, No. 11, November 1956

TAVETKOV, A.L.

<p>ASR 51A METALLURGICAL LITERATURE CLASSIFICATION</p>		<p>7-60001</p>
<p>DATE OF ENTRY</p>		<p>MATERIALS INDEX</p>
<p>COMMON ELEMENTS</p>		
<p>2</p>		
<p>Ivanov, B. V., and Tavetkov, A. L. FORMATION OF COPPER SILICATES IN THE REFRACTORIES USED IN COPPER SMELTERS. <i>Trans. Mineral. Petro. Inst. Geol. Sciences, Acad. Sciences U.S.S.R.</i>, 1940, 187 01.--An investigation was made of Dinas brick from the arch of a copper-refining furnace. The processes occurring in the Dinas brick in service are (1) a deep penetration of the Cu into the body of the brick, and (2) a transformation of the material into a new structure at relatively low temperatures. Cu penetrates into the brick from the hot side to a depth of 140 to 150 mm.; it appears as CuO and Cu₂O arranged in layers. In the transitional zone, Egyptian blue and hedenbergite are formed; the Ca metasilicate is transformed into the β form. The amount of tridymite in the brick increases proportionally in the direction of the hot side.</p>		

[illegible]

[illegible]

CA

8

Structural changes of porous petroleum collecting rocks by treatment with hydrochloric acid. M. A. Tsvetkova. *Doklady Akad. Nauk S.S.S.R.* 60, 581 (1979). Carbonate rocks and sandstones with carbonate cements are widely spread in the Ural-Volga and Trans-Caucasian petroleum regions. The HCl treatment for improving the petroleum output has increasingly practical importance. The studies of the author chiefly concern the structure of carbonate rocks of Gruzia. If carbonate fragments prevail in the clastic rocks, they are often thoroughly disintegrated by HCl, while in rocks with carbonate cements the dissolution follows more rapidly the channels in the cement. The lithological character determines the attack by the acid more essentially than its content. The permeability of the rocks therefore varies widely. Gruzian and Samara Luka polymet rocks with carbon cement showed the desirable increase of permeability, but clastic rocks with carbonate fragments often showed the contrary, because their pores are obstructed by the fine-dispersed insol. material after the acid treatment. The reaction rate is also highly variable with the grain size of the carbonate material in the rocks. W. Fitch

05

ACCESSION NR: AP4006633

S/0089/63/015/006/0516/0517

AUTHORS: Popkov, K. K.; Tabolina, L. N.; Tavetkova, S. A.

TITLE: Dependence of heat release on the iron-water composition of a thermal shielding

SOURCE: Atomnaya energiya, v. 15, no. 6, 1963, 516-517

TOPIC TAGS: thermal shielding, nuclear reactor, reactor, shielding, iron water shielding, reactor shielding, radiative capture

ABSTRACT: A design diagram consisting of a thermal shielding, the vessel of a water-moderated water cooled reactor and primary shielding water were examined with a view to determining the relationship between the heat-release in a reactor vessel and the iron-water composition of the thermal shielding. An electronic computer was used to calculate the space-energy distribution of the neutron fluxes, according to a seven-group scheme proposed by (D. L. Broder, etc., Atomnaya Energiya, 12, 129 (1962)), in order to determine the distribution function of the neutron capture density. The calculated

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ACCESSION NR: AP4006633

distribution magnitudes of the specific heat release from an iron plate are represented in the enclosure, Fig. 2, and the various components of the heat release, as determined by the iron concentration as shown in the enclosure, Fig. 3. When the iron concentration in the thermal shielding is low, the heat release is occasioned primarily by the gamma-radiation from the reactor core. The heat release components, determined by the absorption of capture gamma-radiation, decrease with the increasing iron content in the thermal shielding to 65-70%, and then increase again. This is due to the changing absorptive properties of the iron-water shielding in relation to neutrons. The minimum heat release corresponds to 70% volume concentration of iron in the thermal shielding.

"The authors are grateful to D. L. Broder for his interest in this project, and to I. A. Kulikova and Ye. A. Pavlova for programming the multigroup calculations."

Orig. art. has: 3 Figures and 1 Formula.

ASSOCIATION: None

SUBMITTED: 21Mar63

SUB CODE: NS

DATE ACQ: 07Jan64

ENCL: 03

NR REF SOV: 002

OTHER: 001

Card 2/82

TSUKERVANIK, I.P., TAVETIVA, K.H.

Benzene

Alkylation of aromatic compounds with alcohols in the presence of aluminum chloride.
Part 15. Alkylation of benzene in a continuous action apparatus. Zhur. ob. khim. 22,
no. 6, 1952.

9. Monthly List of Russian Accessions, Library of Congress, NOVEMBER 1952, ~~1952~~, Uncl.

TSUKERVANIK, I.P., TAVYIEVA, KH.

Alkylation

Alkylation of aromatic compounds with alcohols in the presence of aluminum chloride.
Part 15. Alkylation of benzene in a continuous action apparatus. Zhur. ob. khim. 22,
no. 6, 1952.

9. Monthly List of Russian Accessions, Library of Congress, NOVEMBER 1952, ~~1952~~, Uncl.

TAVEYEVA, Kh.

USSR/Chemistry - Alkylation

Jun 52

"Alkylation of Aromatic Compounds by Alcohols in Presence of Aluminum Chloride. XV. Alkylation of Benzene by a Continuous Process," I. P. Tsuker-
vanik, Kh. Taveyeva

"Zhur Obshch Khim" Vol XXII, No 6, pp 966-969

Studied a continuous process for alkylation of benzene in the presence of $AlCl_3$. With isopropyl alc a yield of cumole amounting to 66% of the theoretical was obtained. The method of condensation given is the 1st which permits butylization

218719

USSR/Chemistry - Alkylation (Contd)

Jun 52

of benzene by means of n-butyl alc with a satisfactory yield (up to 60% of the theoretical calcd on the basis of the alc reacting).

218719

TAVGER, B.A., starshiy prepodavatel'.

Space-time symmetry of crystals computed in the presence of
molecular corrants. Uch.zap.Kalin.gos.ped.inst.no.2:77-87 '56.
(MIRA 10:1)

(Crystallography)

548 12 338 112
MAGNETIC SYMMETRY OF CRYSTALS R. A. TAYLOR

considered. Besides transformations of coordinates, transformations involving a change of the sign of time are also treated. The corresponding point groups of symmetry transformations are derived. Nonsymmetry, with respect to change of sign of time, of the structure of crystals possessing magnetic moments is indicated.

A.

AUTHOR: Tavgir, B.A.

70-3-3-15/36

TITLE: The Symmetry of Ferromagnetics and Antiferromagnetics
(Simmetriya ferromagnetnikov i antiferromagnetikov)

PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 3, pp 339 - 341
(USSR).

ABSTRACT: Ferro- and antiferro-magnetics have the symmetry of a spinning top. The usual crystallographic symmetry notation does not, therefore, fully characterise the symmetry of a magnetic material (macroscopic symmetry corresponding to one of the 32 point groups). It is necessary to introduce the concept of invariance or otherwise under a time inversion which reverses \underline{H} , an axial vector, but not \underline{E} , a polar vector. The time inversion operation is denoted here by underlining. The operation $\underline{1}$ can be combined with the 32 point groups to give 58 groups. These groups formally correspond to the symmetry groups of bounded figures with oriented faces developed by Shubnikov. The pseudo-vector of magnetic moment has the symmetry ∞/\underline{mmm} . This can be allowed in the various crystal classes in the following ways:

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The Symmetry of Ferromagnetics and Antiferromagnetics 70-3-3-15/36

Direction of magnetic moment in triclinic classes 1 and $\bar{1}$ - arbitrary

in class 2 , parallel to the axis
 $\underline{2}$, perp. to the axis
 \underline{m} , parallel to the plane
 \underline{m} , perp. to the plane
 $\underline{2/m}$, parallel to the axis
 $\underline{2/m}$, perp. to the axis
 $\underline{222}$ and $\underline{2mm}$, along 2-fold axis
 $\underline{2mm}$, perp. to axis
 \underline{mmm} , perp. to the \underline{m} plane

in all uniaxial classes, 4, 4 $\underline{2}$, 4/ \underline{m} , 4 \underline{mm} , 4/ \underline{mmm} , $\bar{4}$, $\bar{4}2\bar{m}$, 3, 3 $\underline{2}$, 3 \underline{m} , $\bar{3}$, $\bar{3}\underline{m}$, $\bar{6}$, $\bar{6}\underline{2}$, 6, 6 $\underline{2}$, $\bar{6}/\underline{m}$, 6 \underline{mm} , 6/ \underline{mmm} the direction is along the unique axis. In one of the classes permitting ferromagnetism, anti-ferromagnetism may in fact occur. In antiferromagnetics which are weakly ferromagnetic, the direction of the spins does not coincide with the direction of magnetisation. This is possible for the classes 1, $\bar{1}$, $\bar{2}$, $\underline{2}$,

Card2/3 \underline{m} , \underline{m} , $\underline{2/m}$, $\underline{2/m}$, $\underline{222}$, $\underline{2mm}$, $\underline{2mm}$, and \underline{mmm} .

The Symmetry of Ferromagnetics and Antiferromagnetics 70-3-3-15/36

There are 1 table and 6 references, 5 of which are Soviet and 1 French.

ASSOCIATION: Moskovskiy gosudarstvennyy pedagogicheskiy institut
(Moscow State Pedagogic Institute)

SUBMITTED: February 27, 1958

Card 3/3

AUTHOR: Tavger, B.A.

70-3-3-16/36

TITLE: ~~The Symmetry of Piezo-magnetism in Antiferromagnetics~~
(Simmetriya p'yezomagnetizma antiferromagnetikov)

PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 3, pp 342 - 345
(USSR).

ABSTRACT: On the basis of the symmetry of magnetisation the possibility of the occurrence of piezomagnetism in antiferromagnetics is examined. 16 possible types of tensorial description are found for the magnetic piezo moduli. It is shown that piezomagnetism cannot occur in those classes of magnetisation symmetry which contain the operation of inversion of space and time co-ordinates nor in the classes $43m$, 43 and $m3m$ (T_d , O and O_h). Piezomagnetism has not been observed experimentally and on the basis of invariance under a time inversion Zocher and Török (Proc. Nat.Acad.Sci.USA, 1953, Vol 39, p 681) have argued that it is impossible. However, crystals of ferromagnetics and antiferromagnetics are not invariant with respect to a time inversion and can therefore show piezomagnetism. A possible mechanism for piezomagnetism may be a slight rotation of aligned spins by a mechanical deformation. The production of a magnetic moment m_i by a

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The Symmetry of Piezomagnetism in Antiferromagnetics 70-3-3-16/36

strain tensor s_{kl} can be described by $m_1 = a_{ikl}s_{kl}$ where a_{ikl} is the tensorial notation for the piezomagnetic moduli. m_1 is not a pure vector but an axial vector and s_{kl} is assumed symmetrical. The symmetry of a piezomagnetic imposes limitations on a_{ikl} as follows: class of magnetic symmetry, number of independent components 1, $\bar{1}$ 18 components; $\underline{2}$, \underline{m} , $\underline{2/m}$, 10 components; $\underline{2}$, \underline{m} , $\underline{2/m}$, 8 components; $\underline{3}$, $\bar{\underline{3}}$, 6 components; $\underline{222}$, $\underline{2mm}$, \underline{mmm} , 5 components; $\underline{4}$, $\underline{6}$, $\bar{\underline{6}}$, $\bar{\underline{4}}$, $\underline{4/m}$, 6 components; $\underline{32}$, $\underline{3m}$, $\bar{\underline{3m}}$, 4 components; $\underline{4}$, $\bar{\underline{4}}$, $\underline{4/m}$, 4 components; $\underline{222}$, $\underline{2mm}$, \underline{mmm} , 3 components; $\underline{42}$, $\underline{62}$, $\underline{4mm}$, $\underline{6mm}$, $\underline{42m}$, $\bar{\underline{62m}}$, $\underline{4/mmm}$, $\underline{6/mmm}$, 3 components; $\underline{42}$, $\underline{4mm}$, $\bar{\underline{42m}}$, $\bar{\underline{42m}}$, $\underline{4/mmm}$, 2 components; $\underline{32}$, $\underline{3m}$, $\bar{\underline{3m}}$, 2 components; $\bar{\underline{6}}$, $\underline{6}$, $\underline{6/m}$, 2 components; $\underline{42}$, $\underline{62}$, $\bar{\underline{42m}}$, $\bar{\underline{62m}}$, $\underline{4/mmm}$, $\underline{6/mmm}$, $\underline{4mm}$, $\underline{6mm}$, 1 component; $\bar{\underline{62m}}$, $\bar{\underline{62m}}$, $\bar{\underline{62m}}$, $\bar{\underline{6mm}}$, $\bar{\underline{6/mmm}}$, 1 component; $\underline{23}$, $\underline{m3}$, $\bar{\underline{43m}}$, $\underline{43}$, $\underline{m3m}$, 1 component. In the remaining 21 classes all

The Symmetry of Piezomagnetism in Antiferromagnetics 70-3-3-16/36

components are zero.

There are 1 table and 3 references, 2 of which are Soviet and 1 English.

ASSOCIATION: Moskovskiy gosudarstvennyy pedagogicheskiy institut
(Moscow State Pedagogical Institute)

SUBMITTED: February 27, 1958

Card 3/3

AUTHORS: Shuvalov, L.A. and Tavger, B.A. SOV/70-3-6-21/25
 TITLE: The Symmetry of the Magnetostrictive Properties of Crystals
 (Simmetriya magnitostriksionnykh svoystv kristallov)
 PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 6, pp 756-759 (USSR)

ABSTRACT: Magnetostriction is understood as being an even-power deformation as distinct from piezo-magnetism which should be a linear effect. Six different equations are possible relating the deformations r_{ik} or the stresses s_{ik} with the magnetic field H_i , the induction B_i or the magnetisation I_i , namely:

r_{ik} (or s_{ik}) = $L_{iklm} H_l H_m$ (or $B_l B_m$ or $I_l I_m$) where L_{iklm} can be called the magnetostrictive constants. The effect is of importance only for ferro-magnetics so that the most useful form is $r_{ik} = L_{iklm} I_l I_m$. The limitations on L imposed by the crystal symmetry are examined. For classes $\bar{1}$ and $\bar{1}$, the symmetry of the tensor is $\bar{1}$, it has 21 components and the direction of the magnetic moment is arbitrary. For the other classes:

Class	Direction of mag.mom.	Symmetry of tensor.	Cpts.
$2, \bar{2}, m, \bar{m}, 2/n, \bar{2}/m$	along $\bar{2}$ or m or perp. to $\bar{2}$ or m	$2/m$	13
$222, 2mm, \bar{2}mm, mmm$	along $\bar{2}$ or perp. to $\bar{2}$ or m	$2mm$	9
Card1/2 $3, \bar{3}, \bar{6}$	along axis	$\bar{6}$	7
$4, \bar{4}, 4/m$	along axis	$4/m$	7

SOV/70-3-6-21/25

The Symmetry of the Magnetostrictive Properties of Crystals

<u>Class</u>	<u>Direction of mag.mom.</u>	<u>Symmetry of tensor.</u>	<u>Cpts.</u>
$32, 3m, \bar{3}m, \bar{6}m2$	along main axis	$\bar{6}m2$	6
$4mm, 42, \bar{4}2m, 4/mmm$	along main axis	$4/mmm$	6
$6, \bar{6}2, 6/m, 6mm, 6/mmm$			
∞/mmm	along main axis	∞/mmm	5
cubic structure	along cube edge	432	3
polycrystalline texture	arbitrary	$\infty/\infty m$	2

There are 31 magnetic classes. There are 1 table and 6 Soviet references.

ASSOCIATIONS: Institut kristallografii AN SSSR (Institute of Crystallography of the Ac.Sc.USSR) and Moskovskiy gosudarstvennyy pedagogicheskiy institut (Moscow State Pedagogical Institute)

SUBMITTED: September 13, 1958

Card 2/2

24 (0)

AUTHOR:

Tavger, B. A.

SOV/56-35-2-22/60

TITLE:

The Splitting-Up of Atomic Terms With Integral
Total Angular Momenta in a Magnetic Crystal
(Rasshchepleniye atomnykh termov s tselochislennym
polnym momentom v magnitnom kristalle)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958,
Vol 35, Nr 2, pp 467-473 (USSR)

ABSTRACT:

The author suggests a method which facilitates the
determination of degeneration occurring as a result magnetic
symmetry. Basing upon the ideas developed by Bethe (Bete)
(Ref 1) concerning the splitting-up of atomic terms under
the influence of the field in the crystal, an analysis is
developed for the splitting-up of terms in the magnetic
crystal. Here the assumption that the total angular momentum
of an atom is integral serves as a basis. The results
obtained are compared with the splitting-up of atomic terms
in non-magnetic crystals. It is found that magnetic
interaction in the crystal not always compensates degeneration
of the energy levels in the atom completely. It is shown that
the results obtained can also be used for the purpose of

Card 1/2

The Splitting-Up of Atomic Terms With Integral
Total Angular Momenta in a Magnetic Crystal

SOV/56-35-2-22/60

determining the splitting-up of the atomic terms of an atom in a non-magnetic crystal which, however, is located in a magnetic field. Three tables show the results obtained for a large number of magnetic classes G and the sub-groups H. In conclusion the author thanks L. D. Landau, Member, Academy of Sciences, USSR and Professor B. T. Geylikman for their discussions. There are 4 tables and 5 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy pedagogicheskiy institut
(Moscow State Pedagogical Institute)

SUBMITTED: March 27, 1958

Card 2/2

TAVGER, B.A., Cand Phys Math Sci --- (diss) "Magnetic symmetry of crystals and ~~the~~ properties of ferromagnetics and antiferromagnetics." Mos, 1959, 10 pp (Mos State Pedagogical Inst im V.I. Lenin) 150 copies. Bibliography at end of text (20 titles) (KL, 34-59, 111)

84118

24,2200 (1035, 1160, 1482)

S/070/60/005/005/003/017
E132/E360

AUTHOR: Tavger, B.A.

TITLE: The Limiting Magnetic Symmetry¹ of Physical Systems

PERIODICAL: Kristallografiya, 1960, Vol. 5, No. 5,
pp. 677 - 680

TEXT: The limiting groups of magnetic symmetry are, in the international notation, ∞ , ∞m , ∞/m , $\infty 2$, ∞/mm , $\infty\infty$, $\infty\infty m$, (Curie's groups) and ∞m , ∞/m , $\infty 2$, ∞/mm , ∞/mm , $\infty\infty m$. The latter seven groups contain an antisymmetry element denoted by underlining. As deduced by Shubnikov these groups describe textures and the antisymmetry is called black and white. Here, however, the magnetic groups are formally isomorphous but the antisymmetry element is one of time reversal R . Sketches illustrate the groups. In a paramagnetic material the magnetic field H and the induction B are related by $B_i = \mu_{ij} B_j$ where μ is a tensor of the second rank.

The symmetry of the medium reduces the number of components of μ which can be independent. In a gyrotropic medium of symmetry ∞/mm the number of components in μ are reduced to

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S/070/60/005/005/003/017

E132/E360

The Limiting Magnetic Symmetry of Physical Systems

$$\begin{pmatrix} \mu_{11} & \mu_{12} & 0 \\ \mu_{12} & \mu_{11} & 0 \\ 0 & 0 & \mu_{33} \end{pmatrix} .$$

The effect of R can be found by considering that φ in the expression $\mu = \mu^0 e^{i\varphi}$ represents the exponential decay of a wave in the medium. If time is reversed the wave grows instead of dying away and the sign of φ is reversed. The action of R on μ is then to transform it into its complex conjugate. Applying R in the above example we have $\mu_{11} = \mu_{11}^*$, $\mu_{33} = \mu_{33}^*$ and $\mu_{12} = -\mu_{12}^*$. This means that μ_{11} and μ_{33} are real and μ_{12} is imaginary. The symmetry of a natural unpolarised beam of light is ∞/mm . A heated wire emitting electrons has the symmetry ∞/mm and a spherically symmetrical electron emitter

Card 2/3

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S/070/60/005/005/003/017
E132/E360

The Limiting Magnetic Symmetry of Physical Systems
has the symmetry $\infty \infty m$. A magnet with a current along its
axis has the symmetry $\infty 2$. A magnetic quadrupole has the
symmetry ∞ / \underline{mm} .
There 1 figure and 5 Soviet references.

ASSOCIATION: Fiziko-tekhnicheskiy institut Gor'kovskogo
gosudarstvennogo universiteta imeni
N.I. Lobachevskogo (Physics-technical Institute
of Gor'kiy University imeni N.I. Lobachevskiy)

SUBMITTED: December 29, 1959

Card 3/3

TAVGER, B.A. (g. Gor'kiy); ZALESKIY, I.A.

Correspondence with the readers. Fiz.v shkole 20 no.4:98-99
Jl-Ag '60. (MIRA 13:8)

1. 1-ya srednyaya shkola, g.Nikolayevsk-na-Amure.
(Light--Speed) (Electric meters)

KRESIN, V.Z., kand.fiziko-matematicheskikh nauk, (Moskva); TAVGER, B.A.,
kand.fiziko-matematicheskikh nauk (Gor'kiy)

Studying the quantum nature of light. Fiz.v shkole 22 no.5:105-
107 S-O '62. (MIRA 15:12)

(Quantum theory--Study and teaching)
(Light--Study and teaching)

L5352

S/181/63/005/002/042/051
B102/B186

247000

AUTHORS:

Tavger, B. A., and Demikhovskiy, V. Ya.

TITLE:

Some effects caused by the discreteness of the electron energy spectrum in thin films

PERIODICAL:

Fizika tverdogo tela, v. 5, no. 2, 1963, 644 - 648

TEXT: The peculiarities of the behavior of electrons in thin films are discussed. It is shown that the electron states lie in plane sections of the Brillouin zone. In semiconductor films the electrons are shown to occupy only one layer with a concentration of $n < 6 \times 10^{19} \text{ cm}^{-3}$ and their energy is an isotropic square function of the quasimomentum k . With $kT < \frac{6\pi^2 n^2}{m^* L^2}$,

$L \sim 10^{-6} \text{ cm}$, $m = 0.5 m_0$ one obtains $n < 2 \cdot 10^{19} \text{ cm}^{-3}$, $T < 10^3 \text{ K}$. Based on statistical considerations the position of the Fermi level and the temperature dependence of the carrier concentration are calculated for an n-type semiconductor film with impurity conductivity. The following relations

APPROVED FOR RELEASE: 07/16/2001

Some effects caused by ...

S/181/63/005/002/042/051
B102/B186

moment $M = (N_+ - N_-)\mu$ where μ is Bohr's magneton N_+ (N_-) is the occupation number of states with positive (negative) projections of the spin onto the field direction. Electrons with positive (negative) spin projections will occupy all states up to the energy $\eta + \mu H$ ($\eta - \mu H$), so the magnetic moment can be given by $M = \mu \int_{\eta - \mu H}^{\eta + \mu H} \frac{dZ}{dE} dE$. If the field is strong enough ($kT < \Delta E$) the magnetic susceptibility pulsates. This is also the case if $\langle \mu H \rangle_{\max}$ the effective-mass approximation cannot be applied. The pulsation arises in the same range as the de Haas - van Alphen effect but also in metals that do not show the latter. The film has to have a certain thickness: for $E_d = 0.1$ ev and $H \sim 5 \cdot 10^4$ gauss, it should equate 200 atomic layers. There is 1 figure.

ASSOCIATION: Gor'kovskiy gosudarstvennyy universitet im. N. I. Lobachevskogo (Gor'kiy State University imeni N. I. Lobachevskiy)
SUBMITTED: June 11, 1962 (initially)
Card 3/3 September 27, 1962 (after revision)

TAVGER, B.A.

Franck-Condon principle for polyatomic molecules. Opt. i spektr.
15 no.4:561-563 0 '63. (MIRA 16:11)

DEMIKHOVSKIY, V.Ya.; TAVGAR, B.A.

Degree of magnetization of thin ferromagnetic films at low temperatures. Zhur. eksp. i teor. fiz. 45 no.4:1156-1158 0 '63.
(MIRA 16:11)

1. Fiziko-tekhnicheskii institut Gor'kovskogo gosudarstvennogo universiteta.

ACCESSION NR: AP4019874

8/0181/64/006/003/0960/0962

AUTHORS: Demikhovskiy, V. Ya.; Tavger, B. A.

TITLE: Scattering of electrons by acoustical vibrations in thin semiconducting films

SOURCE: Fizika tverdogo tela, v. 6, no. 3, 1964, 960-962

TOPIC TAGS: electron scattering, acoustical vibration, semiconductor, boundary defect, electron function, Brillouin zone, thin film, semiconductor surface

ABSTRACT: The authors have attempted to explain the increase in resistivity with decrease in thickness on the basis of peculiarities in the electron state of the film. They have used a model of an ideal crystal with no consideration of scattering at boundary defects. If the wave length of vibration is small, compared with the thickness of the film, then the film may be considered a massive sample. The authors have examined temperatures at which this is true, and they have found that the model is valid for films on the order of 10^{-5} cm thick in the temperature range 5-50K and for films $3 \cdot 10^{-6}$ cm thick in the temperature range 15-500K. From

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ACCESSION NR: AP4019874

an examination of the electron function and relaxation time, the authors demonstrate that the electron pulse is determined by the temperature up to that temperature at which the electron state is disposed in a single plane cutting the Brillouin zone. Therefore, in the thickness and temperature interval examined, the relaxation time in a film proves to be lower than in massive material, and it decreases with decrease in thickness. The authors thus conclude that the high resistance of a semiconducting film as compared with the resistance of massive samples may be explained on the basis of this "ideal" film, i.e., without consideration of surface defects. Orig. art. has: 6 formulas.

ASSOCIATION: Gorkovskiy Issledovatel'skiy fiziko-tekhnicheskii institut (Gorkiy Research Physicotechnical Institute)

SUBMITTED: 02Oct63

DATE ACQ: 31Mar64

ENCL: 00

SUB CODE: EC

NO REF SOV: 001

OTHER: 001

Card 2/2

L 6476-66 EWT(1)/EWT(m)/EWP(1)/EWP(t)/EWP(b) IJP(c) JD/GG

ACC NR: AP5025252

SOURCE CODE: UR/0386/65/002/004/0160/0164

AUTHOR: Kresin, V. Z. Tavger, B. A. 44,55

ORG: Moscow State Extension Pedagogical Institute (Moskovskiy gosudarstvennyy zaachnyy pedagogicheskiy institut) 44,55

TITLE: Possible superconductivity mechanism in crystalline films 44,55

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu (Prilozheniye), v. 2, no. 4, 1965, 160-164

TOPIC TAGS: superconductivity, electron state, band spectrum, semiconducting film

ABSTRACT: The authors consider one possibility of establishment of a superconducting state, due to the presence of different groups of electrons in a crystalline film. The interaction between the electrons of these groups leads, if certain conditions are satisfied, to Cooper pairing. Different groups of electronic states (subbands) arise in the film because of the finite character of the transverse motion of the electrons (holes), and in each n-th group the state is given by the longitudinal projection of the quasimomentum. In addition, in semiconducting films the degeneracy of the edge of the band, frequently encountered in bulky samples, is lifted because of the decrease in symmetry, leading to the formation of two or more two-dimensional bands, with the edges of the bands shifting relative to one another, and with the electrons differing in their effective masses and wave functions. A quantitative calculation of the effect is made for a model corresponding to the possible band struc-

Card 1/2

0476-66

ACC NR: AP5025252

ture of a semiconducting film. There are two groups of electronic states. The Coulomb interaction of the electrons of the first and second groups leads to an effective interaction between the electrons of the first group. Conditions under which attraction occurs are determined. An equation is derived for the transition temperature and solved graphically. Possible application of the results to superconducting semiconductors is discussed. Authors thank B. T. Geylikman for continuous interest in the work and useful discussions, and L. P. Pitayevskiy and R. A. Suris for interesting discussions. Orig. art. has: 1 figure and 5 formulas.

SUB CODE: GP,SS

SUBM DATE: 09Jun65/

ORIG REF: 006/

OTH REF: 002

NW

Card 2/2

SYNOPSIS: A theoretical and experimental study of the influence of the thickness of a semiconducting film on the nature of the splitting of the energy bands.

TOPIC TAGS: Thin films, semiconductor, silicon, germanium, energy band, band

ABSTRACT: An attempt is made to determine the influence of the film thickness on a semiconducting film on the nature of the splitting of the energy bands.

Card 1/2

1 31901-05

ACCESSION NR: AF5004 193

SECRETARY OF DEFENSE (M)/RDC(f)/FWA(d)/SWP(t)/SAP(b) IJ(c) 3G/CD

SECRETARY OF DEFENSE (M)/RDC(f)/FWA(d)/SWP(t)/SAP(b)

0/0056/65/048/002/0748/0750 5/

SECRETARY OF DEFENSE (M)/RDC(f)/FWA(d)/SWP(t)/SAP(b) IJ(c) 3G/CD

SECRETARY OF DEFENSE (M)/RDC(f)/FWA(d)/SWP(t)/SAP(b) IJ(c) 3G/CD

SECRETARY OF DEFENSE (M)/RDC(f)/FWA(d)/SWP(t)/SAP(b) IJ(c) 3G/CD

TOPIC TAGS: superconductivity, thin film, electron phonon interaction, dielectric,

SECRET

...the principal ... by the ...
... for super conductivity was derived in that paper ...

ASSOCIATION: none

SUBMITTED: 24Sep64

ENCL: 00

SUB CODE: 53, EM

NO REF SOJ: 006

OTHER: 001

ATD PRESS: 3213

Card 3/3

L 29298-66 EWT(1)/T IJP(c) GG

ACC NR: AP6012454

SOURCE CODE: UR/0181/66/008/004/1008/1012

AUTHORS: Kogan, V. G.; Tavger, B. A.

ORG: Gor'kiy State University im. N. I. Lobachevskiy (Gor'kovskiy gosudarstvennyy universitet)

TITLE: ^{2/}Superconductivity in thin nondegenerate ^{2/}semiconductor films

SOURCE: Fizika tverdogo tela, v. 8, no. 4, 1966, 1008-1012

TOPIC TAGS: superconductivity, semiconducting film, semiconductor carrier, semiconductor band structure, carrier density, critical temperature.

ABSTRACT: This is a continuation of earlier work by one of the authors (Tavger, with V. Ya. Demikhovskiy ZhETF v. 48, 748, 1965), where it was shown that conditions for realization of superconductivity in semiconductors can be improved by preparing the sample in the form of a thin film. The present article considers the superconductivity of a many-valley semiconductor film. By using a model in which the electron states lie in a two-dimensional Brillouin zone and the phonon spectrum is the same as for a bulky sample, the authors investigate the dependence of the appearance of superconductivity on the thickness of the film, on

Card 1/2

L 29298-66

ACC NR: AP6012454

4
the carrier density, and on the depths of the impurity levels. The results show that the superconductivity region has two critical limiting temperatures, and that there is no superconductivity from zero temperature to the lower critical temperature. This means that in this temperature interval the electron attraction does not lead to Cooper pairing. The critical temperatures depend strongly on the difference between the depth of the donor levels and the energy gap. When this difference is zero, the lower critical temperature vanishes. With decreasing thickness, the lower critical temperature increases and the higher critical temperature decreases. The authors thank V. L. Bonch-Bruyevich for valuable remarks, B. T. Geylikman, and V. Z. Kresin for useful discussions, and V. Ya. Demikhovskiy for continuous interest in the work and a fruitful discussion. Orig. art. has: 1 figure and 14 formulas.

SUB CODE: 20/ SUBM DATE: 23Jul65/ ORIG REF: 006/ OTH REF: 002

Card

2/2 BK

L 41755-66 EWT(1)/EWT(m)/EEC(k)-2/T/EWP(t)/ETI/EWP(k) IJP(c) WG/JD

ACC NR: AP6011916

SOURCE CODE: UR/0141/66/009/002/0308/0313

AUTHOR: Sokolov, V. M.; Tavger, B. A.

ORG: Scientific-Research Physico-Technical Institute, Gor'kiy University
(Nauchno-issledovatel'skiy fiziko-tehnicheskiy institut pri Gor'kovskom universitete)

TITLE: Nonuniform-magnetisation model in the theory of spin-wave resonance in a thin ferromagnetic film

SOURCE: IVUZ. Radiofizika, v. 9, no. 2, 1966, 308-313

TOPIC TAGS: ferromagnetic film, spin resonance, MAGNETIZATION

ABSTRACT: The boundary conditions are assigned in accordance with two conventional extreme cases: (1) A fixed boundary, $m^-|_{0,L} = 0$ (E. Hirota, J. Phys. Soc. Japan, v. 19, no. 3, 1964) and a free boundary, $\left. \frac{\partial m^-}{\partial z} \right|_{0,L} = 0$. (A. M. Portis, Appl. Phys. Letters, v. 2, 69, 1963). It is also assumed that the

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UDC: 538.62

L 41755-66

ACC NR: AP6011916

4

magnetization nonuniformity is due to the excitation of spin waves and exists even in a perfect film. Thus, the definition of the boundary conditions results in a concrete form of the nonuniform magnetization. For fixed boundary conditions, the found "natural" nonuniformity contradicts the E. Hirota results. The problem of spin-wave resonance, under fixed boundary conditions, is solved by the disturbance method; in the first order, the energy correction is given by:

$$\varepsilon_n^{(1)} = \int m_{x,n}^+ \hat{W} m_{x,n}^- dv = \frac{\mu M_0 k T}{4 A B} \left[\frac{1}{2} \left| \ln (1 - e^{-n/a}) \right| + \sum_{p=1}^{\infty} \left| \ln (1 - e^{-n^p/a}) \right| \right],$$

which is claimed to be in agreement with known experimental data. "In conclusion, the authors wish to thank V. V. Vas'kin, V. Ya. Demikhovskiy, and M. Ya. Shirobokov for useful discussions, and V. S. Metrikin for carrying out the calculations." Orig. art. has: 2 figures and 21 formulas.

SUB CODE: 20 / SUBM DATE: 09Jul65 / ORIG REF: 002 / OTH REF: 006

Card 2/2 *20*

L 43703-66 EWT(l)/EWT(m)/T/FWP(t)/ETI IJP(c) JE

ACC NR: AP6020228

SOURCE CODE: UR/0056/66/050/006/1689/1698

24
80
B

AUTHOR: Kresin, V. Z.; Tavgir, B. A.

ORG: Moscow State Correspondence Pedagogical Institute (Moskovskiy gosudarstvennyy zaachnyy pedagogicheskiy institut)

TITLE: Superconducting transition temperature of a thin film

SOURCE: Zh eksper i teor fiz, v. 50, no. 6, 1966, 1689-1698

TOPIC TAGS: magnetic thin film, electron interaction, phonon interaction, temperature measurement, superconductivity

ABSTRACT: It has been shown that the normal electron-phonon interaction leads to an increase in the critical temperature T_k with a decrease in film thickness L because of the special nature of the electron pairing. The increase in T_k is particularly large for $L \sim 10^{-4}$ cm. With a further decrease in L ($L \leq 10^{-4}$ cm) the dependence becomes exponential. The results include the experimental data.

Card 1/2

1. 43703/66

ACC NR: AP6020228

The accuracy of this interpretation can be confirmed by measurements of the isotopic effect. The possibility of an electron mechanism, determined by the presence of different electron groups in the film, has been investigated. The authors thank B. T. Geylikman for his constant interest in this work and valuable criticism, and D. A. Kirzhnits, A. I. Larkin, and L. P. Pitayevskiy for their interesting discussions. Orig. art. has: 1 figure and 21 formulas. [Based on authors' abstract] [NT]

SUB CODE: 20/ SUBM DATE: 31Jan66/ ORIG REF: 012/ OTH REF: 012/

Card 2/2

L 07094-67 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD/AT

ACC NR: AP6019004

SOURCE CODE: UR/0109/66/011/006/1147/1148

AUTHOR: Demikhovskiy, V. Ya.; Tavger, B. A.

ORG: none

TITLE: Method for studying the phenomenon of quantization of electron energy in a thin film

SOURCE: Radiotekhnika i elektronika, v. 11, no. 6, 1966, 1147-1148

TOPIC TAGS: quantum electronics, semiconducting film, electron energy

ABSTRACT: A method is suggested for experimentally studying the quantized energy spectrum in thin semiconductor or semimetal films. The experimental device includes two thin films having the same conductance type separated by a dielectric layer. The current between the films is realized through tunnel transitions at the dielectric. The current starts to flow when a populated level of

Card 1/2

UDC: 539.216.2.011

L 07094-67

ACC NR: AP6019004

one film occurs vis-a-vis a vacant level of the other film; this comes about when $eV = E_n - E_1$. Phonon transitions may generate a current when the above relation is not satisfied; however, the probability of phonon transitions is much lower than that of direct transitions; hence, only the peaks of the I-V curve will be blurred.

"The authors wish to thank M. Ya. Shirokobokov for his constant interest in the work, and V. B. Sandomirskiy for valuable discussions." Orig. art. has: 4 formulas.

SUB CODE: 20 / SUBM DATE: 27Sep65 / ORIG REF: 006

Card 2/2 *LC*

L 05813-67 EWT(1) LJP(c)

ACC NR: AP6031444

SOURCE CODE: UR/0056/66/051/002/0528/0535

64
62
B

AUTHOR: Tavger, B. A.; Yerukhimov, M. Sh.

ORG: Gor'kiy State University (Gor'kovskiy gosudarstvennyy universitet)

TITLE: Nonlinear dependence of current on the electric field in a thin semiconducting film in a quantizing magnetic field

SOURCE: Zh eksper i teor fiz, v. 51, no. 2, 1966, 528-535

TOPIC TAGS: electric field, semiconducting film, matrix element, electron motion, electron scattering, strong magnetic field, electric current

ABSTRACT: Quantum transverse galvanomagnetic phenomena in a thin semiconducting film are investigated by the method of a density matrix. Quantization of transverse electron motion in the film is taken into account. Electron scattering is calculated by the perturbation theory. It is found that the dissipative current along the film depends on the applied electric field in a nonanalytic manner in the vicinity of zero, namely $I \sim \exp(-1/2e^2)$ and, hence, in contrast to massive semiconductors, the Ohm law does not hold in a thin semiconducting film. A monotonous dependence of the current on the value of the magnetic field is obtained, whereupon

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L 05813-67

ACC NR: AP6031444

2

the current decreases exponentially for strong magnetic fields. It is shown that the decrease of film thickness results in an increase of the dissipative current. The Hall current proves to be the same as that in a massive semiconductor. The authors thank the associates of the Department of Theoretical Physics, Gor'kiy State University for valuable discussions, and V. Metrikin and L. Paramonov for their help in calculations. Orig. art. has: 1 figure and 23 formulas. [Based on authors' abstract]

SUB CODE: 20/ SUBM DATE: 07Feb66/ ORIG REF: 004/ OTH REF: 004/

Card 2/2

feh

TAVGIRIDZE, L.

18(7):6(7) PHASE I BOOK EXPLOITATION SOV/2266
Zashchita podzemnykh metallicheskikh sooruzheniy ot korrozii;
spravochnik. (Protection of Underground Metal Structures From
Corrosion: Manual) Moscow, Izd-vo M-va Kommunal'nogo Khoz.
MPSR, 1959. 743 p. Errata slip inserted. 6,000 copies printed.
M.: M.I. Ryabtsyev; Ed. of Publishing House: V.G. Akatova; Tech.
Ed.: Ye. S. Petrovskaya.

PURPOSE: This collection of articles is intended as a manual on
corrosion protection of underground metal structures.

COVERAGE: The book is divided into four parts. The first part
gives information on the characteristics of underground metal
structures and sources of their corrosion. The second part deals
with the theory of soil corrosion of metals and the theory of
corrosion of metals by stray current. The third part deals with
the problem of combating leakage from sources of stray current,
methods and devices for investigating corrosion and the funda-
mental measures for preventing corrosion. The fourth part ex-
plains measures for preventing corrosion of underground metal
structures and gives the basic operating principles of equipment
involved. No personalities are mentioned. References follow
Card 1/26

Protection of Underground Metal (Cont.)

SOV/2246

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Card 11/26

TAVIC, F.

Mud and points. p. 690.

Six-Day Race through the eyes of foreigners. p. 691.

Vol. 9, no. 22, Oct. 1955

SVET MOTORU

Praha, Czechoslovakia

So: Eastern European Accession Vol. 5 No. 4 April 1956

ZAİMAN, M.W.; ELIAS, A.; BRADIN, Z.L.; PELLE, A.; GHİMIS, L.; IOTCOVICI, S.;
TAVIE, A., technician

Serological studies of mumps vaccination. Stud. cercet. infra-
microbiol. 16 no.2:129-133 '65.

TAVIL', A.B.

High-speed pneumatic system for measuring displacements. Izv. tekhn.
no.1:25-26 Ja '65. (MIRA 19:4)

BIRYUKOV, G.S.; TAVIL', A.B.

Lapping tool with a pneumatic-hydraulic diameter regulation. Stan.
1 instr. 36 no.9:25-26 S '65. (MIRA 18:10)

TAVILDAROVA, T. F.

Tavildarova, T. F. - "Ecologic study of cattle in the Uzbek SSR", Sbornik po zootekhnii i parazitologii, Tashkent, 1946, p. 5-23, - Bibliog: 31 items.

SO: U-3261, 10 April, 53, (Letopis 'Zhurnal 'nykh Statey, No. 11, 1949).

TAVILDAROVA T. F.

1A 11CT8

USSR/Biology - Cattle

Jun 50

"New Breed of Cattle - Kazakh White-Headed Breed,"
M. Z. Zaliakberov, Cand Agr Sci, T. F. Tavildarova,
Cand Agr Sci, Inst of Animal Husbandry, Kazakh
Affiliate, All-Union Order of Lenin Acad Agr Sci
Imeni V. I. Lenin

"Dok v-s Ak Selkhoz Nauk" No 6, pp 14-18

Cites data on productivity of milk and meat of
several herds of new breed developed by inter-
breeding, started in 1932, of local cattle with
Herefords imported from England and Uruguay. Sub-
mitted 20 Jan 50 by Acad Ye. F. Liskun.

170T8

USSR / Farm Animals. Cattle

Q-2

Abs Jour: Ref Zhur-Biol., No 3, 1958, 12058

Author : Tavildarova T. F., Gordiyenko M. F.

Inst :

Title : Utilization of Measurements in the Evaluation of the
Body Build of Cattle (Ispol'zovaniye promerov dlya
otsenki teloslozheniya krupnogo rogatogo skota)

Orig Pub: Tr. Alma-Atinsk. zoovet. in-ta, 1956, 9, 24-35

Abstract: Expeditionary data consisting of measurements,
live weight and evaluation of the exterior of ani-
mals of various breeds, namely White Head Kazakh,
Ala-Tau, Aulie-Ata, Red Steppe, and local Kazakh
cattle (1949-1951), were used. The Red Steppe breed
was represented chiefly by crossbreeds of the 2nd
and 3rd generations. The distinguishing traits of
basic differences in the exterior of animals of

Card 1/2

USSR / Farm Animals. Cattle.

9

Abs Jour : Ref Zhur - Biologiya, No 5, 1959, No. 21224

Author : Tavildarova, T.

Inst : Not given

Title : Methods of Improving Cattle in Kazakhstan

Orig Pub : S.-kh. Kazakhstan, 1958, No 1, 20-23

Abstract : At the beginning of 1956, the Kazakhskaya Belogolovaya breed constituted 31 percent of the total livestock population in Kazakhstan, whereas the Alatauuskaya breed constituted 14 percent, the Red Steppe breed 27 percent, the Simmenthal breed 14 percent, the Auliyeatinskaya breed 3 percent, the Astrakhanskaya breed 4 percent, and the hybrids of other breeds as well as improved breeds 8 percent. Of the total livestock population of the Kazakhskaya Belogolovaya, Alatauuskaya and Auliyeatinskaya breeds, purebred animals constitute only 10 - 12 percent.

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USSR / Farm Animals. Cattle.

Abstr Jour : Red Zhur - Biologiya, No 5, 1959, No. 21224

It is necessary to continue the absorptive crossing of late generation hybrids with unimproved cattle, with subsequent reinforcement of desirable thoroughbred types which were established at various farms. In Kazakhstan the Auliainskaya breed is improved with the Estonian Black-spotted breed, the Red Steppe breed with the brown Latvian breed; the work of alternate crossing (Kazakhskaya Belogolovaya X Aberdeen-Angus X Santa Gertrudis) has begun. It is imperative to create strains as well as families within the breeds while preserving the singular breed, and to work out basic rules of thorough-breeding with individual breeds. --
K. M. Lyutikov

Card 2/2

TAVILDAROVA, T.F., prof., doktor sel'skokhozyaystvennykh nauk.

Structure of the cattle breed. Zhivotnovodstvo 20 no. 7:56-58
Jl '58. (MIRA 11:8)

1. Alma-Atinskiy zooveterinarnyy institut.
(Cattle breeding)

TAVILDAROVA, T.F., prof., doktor sel'skokhoz.nauk

Certain factors influencing the formation of the desirable type
of cows. Zhivotnovodstvo 21 no.7:24-30 Ja '59.
(MIRA 12:2)

(Kazakhstan--Cattle breeding)

KHONIN, V.A.; SUCHKOV, M.A.; BESSONOV, A.A.; Prinimala uchastiye
TAVILDAROVA, T.F., doktor sel'khoz. nauk, prof.;
NAZARENKO, L.I., red.; NAGIBIN, P.A., tekhn. red.

[State herdbook of Red Steppe cattle] Gosudarstvennaia plemen-
naia kniga krupnogo rogatogo skota krasnoi stepnoi porody.
Alma-Ata, Kazsel'khozgiz. Vol.14 [Karaganda and North Kazakh-
stan Provinces in the Kazakh S.S.R.] Karagandinskaia i Severo-
Kazakhstanskaia oblasti Kazakhskoi SSR. 1962. 410 p.
(MIRA 17:2)

1. Kazakh S.S.R. Ministerstvo sel'skogo khozyaystva.

TAVAKESHEVA, S. M.

TAVAKESHEVA, S. M. -- "A Study of the Properties of Solutions of the System: Magnesium Chloride-Magnesium Sulfate-Water by Means of Physico-chemical Analysis." Sub 13 Feb 52, Inst of General and Inorganic Chemistry imeni N. S. Kurnskov, Acad Sci USSR. (Dissertation for the Degree of Candidate in Chemical Sciences.)

SO: Vechernaya Moskva January-December 1952

Tavkashcheva, S.M.

4

✓ Properties of aqueous solutions of magnesium chloride and sulfate. G. G. Urazov and S. M. Tavkashcheva. Izvest. Sektsiya Fiz.-Khim. Anal., Inst. Gornoy i Metall. Khim., Akad. Nauk S.S.S.R. 26, 275-89 (1955).—Density and viscosity isotherms of the systems $MgSO_4-H_2O$ and $MgCl_2-H_2O$ at 0° and 25° do not indicate special points. Cond. isotherms pass through a max. (which shifts only slightly with temp.) at compn. approximating the eutectic (cryohydric) points of the systems. Cond. isotherms of the system $MgCl_2-H_2O$ at 0° show a break at concn. close to the dodecahydrate. At 25° this break is smoothed as a result of heat dissocn. of the dodecahydrate. V. N. Bednarski.

Inst. Gen + Inorg. Chem im N.S. Kurnakov, AS USSR

TAVKHELIDZE, A.N.; BOGOLYUBOV, N.N., akademik, nauchnyy rukovoditel'.

[Field theory methods in problems with a fixed nucleon source; abstract of a dissertation offered for the degree of candidate of physical and mathematical sciences] Metody teorii polia v zadachakh s fiksirovannym nuklonnym istochnikom; avtoreferat dissertatsii, predstavlennoi na soiskanie uchenoi stepeni kandidata fiziko-matematicheskikh nauk. Moskva, Akad.nauk SSSR, 1956. 5 p.

(MIRA 10:11)

(Nucleons)

Name: TAVKHELIDZE, A. N.

Dissertation: Field theory methods in problems with a fixed zero source

Degree: Cand Phys-Math Sci

Affiliation: Acad Sci USSR, Mathematical Inst imeni V. A. Steklov

Defense Date, Place: 1956, Moscow

Source: Knizhnaya Letopis', No 1, 1957

TAVKHELIDZE, A. N., LOGUNOV, A. A. and SOLOV'YEV, L. D.

"Photoproduction Processes and Dispersion Relations," Nuclear Physics, Vol. 4,
No. 3, 1957 (North Holland Publishing Co. - Amsterdam)
(Received 25 Mar 57)

Abstract: Dispersion relations for photoproduction of π - mesons on nucleons are obtained. The role of "bound states" is discussed in connection with an analysis of the unobservable energy region. The matrix structure of the photoproduction amplitude is considered. The dispersion relations are presented in a form convenient for phase shift analysis.

Joint Inst. of Nuclear Research, Lab of Theoretical Physics, Dubna USSR
(for Logunov and Tavkhelidze)
Moscow State University (for Solov'yev, L. D.)

19-24 Ja '57, H. N.
LOGUNOV, A. A.; TAVKHELIDZE, A. N.

Dispersion correlations for meson-nucleon collisions in the
proximity of nucleons at rest. Soob. AN Gruz. SSR 18 no.1:
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(MIRA 10:5)

1. Tbilisskiy gosudarstvennyy universitet im. Stalina.
Predstavleno chlenom-korrespondentom Akademii V.I. Mamasakhlisovym.
(Collisions (Nuclear physics)) (Mesons) (Nucleons)

LOGUNOV, A.A.; TAVKHELIDZE, A.N.

Dispersion correlations and equations of phase displacements for
meson-nucleon collisions in the proximity of nucleons at rest.
Sob. AN Gruz. SSR 18 no.5:533-540 My '57. (MLRA 10:9)

1. Tbilisskiy gosudarstvennyy universitet im. Stalina. Predstavleno
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(Mesons) (Nucleons)

TAVKHELIDZE, A. N.

"Methods of the Field Theory in the Problems with Fixed Nucleon Source."

dissertation defended for the degree of Cand. of Phys-Math. Sci. at the Inst. of
Math. im V. A. Steklov,

Defense of Dissertations (Jan-Jul 1957)

Section of Physical Math. Sci.

Vest. AN SSSR, v. 27, No. 12, 1957, pp. 108-9

AUTHOR LOGUNOV, A.A., TAVKHELIDZE, A.N. 56-6-16/56
TITLE Dispersion Relations for Photoproduction of Mesons on Nucleons
(Dispersionnyye sootnosheniya dlya reaktsiy fotorozhdeniya π -mezonov na nuklonakh. Russian)
PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 6, pp 1393 - 1403
(U.S.S.R.)
ABSTRACT In the present paper these dispersion relations are derived by the BOGOLYUBOV'S method. The authors at first compute the amplitudes of photoproduction; the course of the computation is followed step by step. Next, an auxiliary amplitude of this reaction and its properties are dealt with. The study of the rôle played by the bound states on the occasion of the processes of photoproduction is essential because it is connected with the analysis of the unobservable energy domain in the dispersion relations. Because of the smallness of the coupling constant e (electric charge), the energy of the interaction with the electromagnetic field may be regarded as a perturbation. Therefore, also a development in series according to the eigen states of the energy momentum vector of the meson-nucleon system is possible. Next, information is given on the matrix structure of the amplitude of photoproduction. In conclusion, formulae for the dispersion relations are obtained on the basis of certain assumptions discussed in the present paper on the degree of increase of the amplitude of the photoproduction in infinity by the application of CAUCHY'S theorem. These dispersion relations are

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55-6-16/56

Dispersion Relations for Photoproduction of Mesons on Nucleons

then transformed by elimination of the domain of the negative energies.
(With 1 illustration)

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24.7.1956
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533.16 : 533.172.3
✓5255. ON THE ROLE OF COMPOUND STATES IN PHOTO-
LYSIS OF MOLECULAR CRYSTALS. A. A. Tikhonov, B. M. Stepanov and
A. N. Tikhonova
THEORY AND EXPERIMENT

16(1), 21(1), 24(5)

AUTHOR: Tavkhelidze, A.N.

SOV/155-58-2-37/47

TITLE: On the Group of Renormalization in Problems With a Fixed Source of Nuclons (O renormalizatsionnoy gruppe v zadachakh s fiksirovannym nuklonnym istochnikom)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskiye nauki, 1958, Nr 2, pp 169-173 (USSR)

ABSTRACT: The method of the group of renormalization proposed by Bogolyubov and Shirkov [Ref 1] is used by the author for the investigation of the asymptotical behavior of Green's function in problems with a fixed source of nuclons. The author restricts himself to the consideration of the symmetric theory of Kemmer. In spite of a missing of closed nuclon loops, the obtained asymptotic expansion shows a certain "pole situation", where because of the assumptions on the behavior of the functions in the neighborhood of the poles nothing can be said. The author thanks the academician N.N. Bogolyubov for giving the theme and A.A.Logunov and D.V.Shirkov for advices.
There are 5 references, 2 of which are Soviet, 1 American, 1 Swiss, and 1 Italian.

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